



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/760,593

01/21/2004

Eric A. Merz

117097

3233

25944

7590

09/01/2006

OLIFF & BERRIDGE, PLC

P.O. BOX 19928

ALEXANDRIA, VA 22320

EXAMINER

VO, ANH T N

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/760,593

Applicant(s)

MERZ ET AL.

Examiner

Anh T.N. Vo

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) 22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21, 24, 25 and 27-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***FINAL REJECTION***

The objection to the claims and the rejection under 35 USC, 112 second paragraph, are withdrawn in view of the amendments to these claims.

Claims 22-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected claim, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/15/06.

***Claim Rejections***

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24-28 are rejected under 35 USC 102 (b) as being anticipated by Tsuchii (US 6,398,353).

Tsuchii discloses in Figures 1-12 an ink cartridge comprising:

- a fluid container having at least one free fluid reservoir (3) located in the container in side-by-side relationship with a negative pressure medium containing chamber (4) and fluidly connected thereto;
- an fluid delivery port directly connecting the at least one free fluid reservoir (3) and a fluid ejector (11) to deliver fluid to the fluid ejector directly from the free fluid reservoir (3); and
- wherein the negative pressure medium containing chamber (4) are located, at least in part, over the fluid delivery port (Figure 1).

*Claim Rejections - 35 USC § 103*

The remaining are dependent from the above rejected claims. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 12-21 and 29-30 are rejected under 35 USC 103 (a) as being unpatentable over Tsuchii (US 6,398,353) in view of Dowell (US 6,773,097).

Tsuchii discloses in Figures 1-12 an ink cartridge comprising:

- a fluid container having at least one free fluid reservoir (3) located in the container in side-by-side relationship with a negative pressure medium containing chamber (4) and fluidly connected thereto;
- an fluid delivery port directly connecting the at least one free fluid reservoir (3) and a fluid ejector (11) to deliver fluid to the fluid ejector directly from the free fluid reservoir (3);
- wherein the negative pressure medium containing chamber (4) are located, at least in part, over the fluid delivery port (Figure 1);
- wherein a filter (9) is located between the fluid delivery port and both the free fluid reservoir and the negative pressure medium chamber;
- wherein the filter contacts a substantial portion of the cross-sectional area of the negative pressure material (4);
- wherein the negative pressure medium (6) is separated from and located over the filter (9, Figure 9A);
- wherein the negative pressure medium (6) is located over approximately a same amount of area as the free fluid reservoir is located over (Figure 1);
- wherein the filter (9) comprising at least one capillary element or rib (35, 37, 37, Figures 9A-9B) located between the filter (9) and the negative pressure material (6); and

Art Unit: 2861

- wherein at least one bubble chamber (space above the ink (13), Figure 1) is located in the fluid container.

However, Tsuchii does not disclose that the ratio of the volume of the free fluid reservoir (3) and the volume of the negative pressure medium containing chamber (4) is between about 0.3 to 1 and 3.0 to 1 as recited in claims 1 and 29, between 0.5 to 1 and 2 to 1 as recited in claim 14 or approximately 1 to 1 as recited in claims 15 and 30.

Nevertheless, Dowell suggests in Figures 1B, 4 and 10-11 an ink cartridge comprising an bubbling chamber (209), a free ink chamber (214) and a negative pressure chamber (210), wherein the volume of a negative pressure chamber (210) is smaller than the volume of the free fluid chamber (214) at a predetermined ratio for improving performance capability of the cartridge and increasing volumetric efficiency of the ink supply, see lines 51-57, column 8.

It would have been obvious to a person having skill in the art at the time the invention was made to select the negative pressure chamber of Tsuchii smaller than the free ink chamber as suggested by Dowell for the purpose of for improving performance capability of the cartridge and increasing volumetric efficiency of the ink supply.

Noted that, although Dowell does not specify the volume ratios as claimed; however, selecting an optimum ratio for optimizing the supply of ink is considered to be a matter of a design expedient for an engineer. In re Boesch, 617F.2d 272.205USPQ215(CCPA 1980). Lacking of showing any criticality, it would have been obvious to a person having skill in the art at the time the invention was made to select the volume ratios of Tsuchii as claimed for the purpose of enhancing the ink supply to the head.

With regard to claim 4, the modified ink cartridge of Tsuchii would have the portion of the filter in contact with the negative pressure material (6) which is less than the area of the filter in contact with the free fluid reservoir (3) since the negative pressure chamber is smaller than the free ink chamber.

With regard to claims 22-23, the modified ink cartridge of Tsuchii would be

Art Unit: 2861

manufactured by the claimed steps of manufacturing, selecting and applying since it has the structure similar to the structure of the claimed fluid tank. Obviously, the lids, the size and shape of negative pressure chamber and the free ink chamber or the negative pressure material of the modified ink cartridge of Tsuchii would be selected to accommodate with the size and shape of a predetermined printing system. Thus, selecting the lids, the chamber configurations and the negative pressure material for the purpose of accommodating with requirement of the predetermined printing device is considered to be a matter of a mechanical design expedient for an engineer that would have been obvious at the time of the invention.

Claims 10-11 and 31 are rejected under 35 USC 13 (a) as being unpatentable over Tsuchii (US 6,398,353) in view of Dowell (US 6,773,097) and further in view of Hayashi et al (US 6,698,871).

Tsuchii in view of Dowell discloses an ink cartridge with all of the limitations of the base claim as stated above but does not disclose that the negative pressure material (6) is made of felt or non-woven material.

Nevertheless, Hayashi et al suggests in Figures 1 using a negative pressure material (1a-1c) made of non-woven material such a felt for decreasing ink residue remaining in the tank, see lines 22-32, column 10.

It would have been obvious to a person having skill in the art at the time the invention was made to employ the pressure material as suggested by Hayashi et al in the modified ink cartridge of Tsuchii for the purpose of decreasing the ink residue remaining in the ink tank.

### ***Response to Applicant's Arguments***

Applicant's election with traverse of claims 1-22, 24-25 and 27-31 in the reply filed on 6/15/2006 is acknowledged. The traversal is on the ground(s) that the subject matter of all claims 1-31 is sufficiently related that a thorough search for the subject matter of any one Group

of claims. This is not found persuasive because claims 22-23 of the Group I have separate utility such as an assembly kit which is classified in class 347, sub-class 108 from claims 1-22, 24-25 and 27-31 of Group II which address to class 347, sub-class 87. Since the inventions I and II are distinct the search would be different for these Groups. The requirement is still deemed proper and is therefore made FINAL.

The applicant argues on the amendment filed 3/13/06 that Tsuchi fails to disclose the ratio volume” of a free fluid reservoir and a negative containing chamber as recited in claim 1. The argument is not persuasive. Although Dowell does not specify the ratio of the free fluid reservoir and the negative chamber as claimed; however, this ratio can be selected to enhance the supply of ink to the head. Thus, selecting an optimum ratio for optimizing the supply of ink is considered to be a matter of a design expedient for an engineer. *In re Boesch*, 617 F.2d 272, 205 USPQ2d 15 (CCPA 1980). One having skill in the art would have been motivated to select the optimum volume ratios of the modified negative chamber and the modified free fluid reservoir of Tsuchii in view of Dowell as claimed for the purpose of enhancing the ink supply to the head.

The applicant argues that Tsuchii fails to disclose that “wherein the negative pressure medium is separated from and located over the filter” as recited in claim 5. The argument is not persuasive because this limitation is shown on Figure 9A of Tsuchii in which the medium (6) is separated from the filter (9) by element (37).

The applicant argues that Tsuchii fails to disclose that “delivering fluid from the cartridge only through a portion of the delivery port that is beneath the free reservoir”. The argument is not persuasive because this limitation is shown on Figure 10 in which the ink is delivered to the head (2) through the port (42) beneath the free reservoir (3F).

The applicant argues that there is no motivation to combine Dowell and Hayashi with Tsuchii. The argument is not persuasive because the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tsuchii discloses an ink cartridge with

Art Unit: 2861

all of the imitations as stated above but does not disclose that the volume of the negative pressure chamber is smaller than the volume of the free fluid reservoir as recited in claim 1 and the negative pressure material (6) is made of felt or non-woven material. However, Dowell suggests the ink cartridge having a free ink chamber (214) and a negative pressure chamber (210), wherein the volume of a negative pressure chamber (210) is smaller than the volume of the free fluid chamber (214) at a predetermined ratio for improving performance capability of the cartridge and increasing volumetric efficiency of the ink supply, and Hayashi et al suggests in Figures 1 using a negative pressure material (1a-1c) made of non-woven material such a felt for decreasing ink residue remaining in the tank. Thus, incorporating the suggestions of Dowell and Hayashi et al in the cartridge of Tsuchii would have been obvious to a person having skill in the art.

### ***CONCLUSION***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262. The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 7:00 P.M..




Application/Control Number: 10/760,593

Page 8

Art Unit: 2861

The fax number of this Group 2861 is (571) 273-8300.



**ANH T.N. VO**  
**PRIMARY EXAMINER**  
August 30, 2006